Print Memory Utility

Page application

Fri, Jun 13, 1997

It is often of interest to know some bit of information from an entire set of nodes. The information desired may be located at the same address in memory in all nodes in the set. The usual Memory Dump page application can be used of course, but typing node#s one by one can be tedious. The Print Memory page application can make this process easier.

Page Layout

```
H PRINT MEMORY    06/13/97 1634
FILE<NBRF>    LIST<0576>
ADDR<00000E00>W
SIZE<   16>
LINE<   32>
NODE=06CF
CNTR=   21
```

The FILE parameter is a data file name. Here the file name NBRF refers to a local file called DATANBRF—the file type name is always assumed to be DATA—that contains a list of all the IRM nodes in the Booster HLRF control system. This file can easily be created using the MPW assembler and linker and the MPW tool called TFTPtool to download the resultant CODE resource in the usual way.

The LIST parameter is the node# whose serial port is used to target the lines of print output. Typically, this node would have its serial port connected to a terminal emulator program on a Macintosh or PC so the text can be captured for printing.

The ADDR parameter is the base address of memory whose contents are to be printed for each node in the node list file. The letter B, W, or L that follows the address indicates that the memory data is to be accessed by bytes, words, or longwords, respectively.

The SIZE parameter is the amount of memory starting at the base address that is to be printed, in the range 1–256 bytes. The LINE parameter specifies the format of how many bytes are to be printed on each line, in the range 1–32 bytes.

The NODE field and CNTR fields show the current node# and count of nodes that have already been processed during memory data acquisition as each node is queried every 15 Hz (or 10 Hz) cycle. Provision is made for nodes that deliver data late, say, because they reside in Germany, for example, as well as for retrying a couple of times in case no response is forthcoming for the current node being queried. These two fields are output fields. Normally, after all the data has been collected and printed from all the nodes in the list of nodes, the NODE field will match the last node# in the list from which data was collected, and the CNTR field will show the total number of nodes from

Printed data format

```
FILE<NBRF>  06/13/97 1625
 06B1:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B2:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B3:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B4:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B5:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B6:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B7:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06B9:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06BA:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06BB:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06BC:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06BD:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06BE:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06BF:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06C0:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06C1:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06C2:00000E00   0030 0048 0005 165D FFF5 FF3D 000E F3B6
 06CA:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06CB:00000E00   0040 0048 0004 E827 7300 7F80 000E F896
 06CE:00000E00   0010 0048 0000 0001 FFFF FC10 000E BCB8
 06CF:00000E00   0030 0048 0005 0025 7300 7F80 000E F896
```

The above is an example of the printed output result of operating the program with the set of parameters shown. For each node# represented in the data file, the node# is shown followed by the memory address. After space for an error status indicator, if any, the memory data is displayed in a format that reflects the mode of access. In this case the access was by words, so the data is shown as 16-bit words. If byte access were specified, the data would be shown as separate 8-bit bytes. If longword access were specified, the data would be shown as 32-bit longwords. Values that may be shown to reflect error status are likely to be only these two:

4 Bus error detected during memory data access

8 No response received from the node

Additional error codes 1–3, 5–7, indicate internal errors that should not occur.